DECISION MAKER

CREATIVE
SOFTWARE

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Decision Maker is designed to run on the ATARI model 400 or 800 computer. Two versions are available, one for tape and one for disk. The tape version comes on one cassette and requires the ATARI 410 program recorder and 16K of memory. The disk version comes on one diskette and requires the ATARI 810 disk drive and 32K of memory. The ATARI 825 printer (or equivalent) is optional on both versions. The manual describes the operation of both versions.

SECTION 1: HOW THIS MANUAL IS ORGANIZED

The manual is divided into four chapters. The first chapter contains general introductory information and overviews. The second chapter discusses how to load the program from disk or tape. The third chapter goes into detailed explanations of the operation of the program. The fourth chapter gives some specific examples demonstrating the principles and explanations given in the earlier chapters.

Chapter 1 presents a brief introduction to decision theory and some concepts involved in formulating and reaching a decision. The concepts introduced in that section are important in understanding how to make best use of the Decision Maker program.

Chapter 1 also presents an overview of the design and operation of the program, and describes the conventions you should follow in entering data.

Chapter 2 gets you started by describing how to load the program into your computer and start it running. Instructions are given for both the tape and disk versions.

Chapter 3 contains the detailed instructions and explains how to use each of the available features of the program. It guides you step by step through every operation, pointing out which keys to press in various circumstances and what the various displays and instructional messages mean.

Chapter 4 presents two examples of typical decisions. These hypothetical examples demonstrate in a concrete way how the Decision Maker program is actually used to formulate a decision and come to a conclusion.

SECTION 2: SOME IMPORTANT CONCEPTS

THE BASIS OF DECISIONS

Decisions are often made on the basis of emotion as well as logic, and are best made using a blend of both. Emotion leads us to have preferences and dislikes, which are valid and necessary elements in making a decision. Logic allows us to weigh and evaluate, and to measure the pros and cons of various alternatives. Decisions based solely on emotion tend to be inconsistent or hysterical, and are often later regretted. Decisions based solely on logic tend to be sterile and fail to take into account the full range of our human consciousness.

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This program is designed to take both emotion and logic into account. You provide both opinions and facts, and the computer uses these to calculate the best among the alternatives you have given.

ALTERNATIVES AND FACTORS

Let us define a decision as a process of evaluating a number of ALTERNATIVES to see which is the best one. There may be as few as two alternatives, such as a choice between yes or no. This program is able to handle up to ten alternatives, which should be ample for all but the most unusual cases.

In order to choose which alternative is best, it is necessary to take into account what influencing FACTORS play a role in making the decision. The program can handle from one to eleven factors for each decision.

SCORING ALTERNATIVES

The most important procedure in making a decision is the scoring of alternatives. If you have ever ranked things on a scale of one to ten, for example, you were doing this. A score is simply a number assigned to each alternative in the decision. The stronger your preference is for a certain alternative, the higher the number you assign it, and vice versa.

However, it is important to keep in mind that the VALUES of the numbers themselves are not what's important; it is the RATIO between the numbers that matters. That is, if your feelings tell you or logic dictates that one alternative is twice as preferable as anohter, you should assign a score to the one alternative that is twice as high as the score you assign to the other.

A score can be assigned to an alternative only when that alternative is looked at from ONE specific point of view, that is, only in terms of ONE influencing factor. For example, one might give a particular womana score of "10" on the basis of her looks, but may give the same woman a score of "5" when her sense of humor is taken into account.

SECTION 3: PROGRAM DESIGN

THE MENU

Decision Maker is what is called a "menu drive" program. You are presented with a list, called a MENU, of operations to perform and you select the operation you want from the list. This makes the program very easy to use, since you always know just what options are available to you at any point in the program.

The process of setting up the structure of a decision and putting the information into the computer may involve many steps. To make the job easier for you, the Decision Maker menu has been arranged in roughly the same step-by-step order you would follow to complete the whole decision-making process.

The menu is your "guide book" through all the operations of the program. You select operations from the menu, one after the other, until the whole decision making process is complete.

DATA ENTRY

Decision Maker has been designed to make the entry of your data as easy and foolproof as possible. The procedure is much like filling in the blanks on a form; all you have to do is tell the computer which blank you wish to fill in. You can also see how much room there is in each blank so you know how many letters or numbers you can type in.

Whenever you are expected to type something, a rectangular cursor appears on the screen. There may also appear a length of underlining; this is the "blank" you are expected to fill in. You should simply type in the requested information and, when done, press the RETURN key to store your entry into the ATARI's memory. All data entry must be terminated by pressing RETURN.

If you make a mistake while typing and haven't pressed RETURN yet, use the BACK S key to back up over the incorrect part and retype the entry correctly. If you have already pressed RETURN before you notice a faulty entry, be patient, for the program will always give you a chance to go back and correct mistakes.

While the Decision Maker program is running, many of the ATARI's keys are disabled. These include the keys which move the cursor around, and the CLEAR, INSERT, and DELETE keys. Furthermore, commas, colons, asterisks, and quotation marks are not allowed. Your data entry, in fact, should normally be restricted to numerals, letters, and punctuation marks other than those mentioned above.

DEFAULTS

A DEFAULT is information the program automatically uses if you don't tell it otherwise. Decision Maker has only two defaults. The first kind of default is used when you are expected to make a numeric data entry, and the second is when you are making an alphabetic data entry.

If you are expected to enter a number but you press RETURN without typing a number, it is the same as if you had entered a zero. Thus, zero is the default for numeric data. Sometimess, it can be very convenient to simply press RETURN when you intend to enter a zero.

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The default for alphabetic data is a blank space. If you press RETURN when you are expected to type in some alphabetic data, it is the same as if you had left that space blank. This default is provided for in the Decision Maker program even though it is unlikely you will ever want to use it.

OVERVIEW OF THE PROGRAM

Decision Maker allows you to enter descriptions of the alternatives and factors involved in your decision. You may add to the list of alternatives and factors, modify them, or delete them at will.

In addition, the program prompts you to assign values of importance to each factor. These values may be modified at any time.

Further, the program takes you step by step through the process of assigning scores to each alternative with regard to each factor. These numbers may also be modified at any time.

Decision Maker allows you to store the data you entered in the above steps on disk or tape, and to recall it later. Thus, the processes involved in formulating your decision can be preserved for your future use and manipulation. Additionally, you disk users may view the disk directory to see what Decision Maker files you currently have stored on the disk.

Finally, the program computes and displays the decision results, based on the data you have given it. The results may be displayed on the screen or, if you have a printer, you may choose to have the decision printed out on paper.

Altogether, Decision Maker is extremely flexible, and allows you to come to conclusions and make decisions in a way that you may find difficult to do without a computer. It encourages the use of both emotion and logic, and strengthens your skills in formulating the alternatives and factors involved in a decision in a reasonable and manageable way.

LOADING INSTRUCTIONS, CASSETTE VERSION

To load Decision Maker, place the tape called "Decision Maker" in the cassette unit and rewind the tape. Type CLOAD and press the RETURN key. The ATARI will beep once. Press the PLAY button on the cassette unit and then press the RETURN key again. The tape will move and the program will load. After the program is loaded, the tape will stop and the ATARI will show READY. Now type RUN and press RETURN to start the program.

If you get an error while loading, the ATARI will stop and display an error message. You should rewind the tape and repeat the above procedure. If Decision Maker keeps failing to load properly, you may have your cassette unit too close to your TV set, in which case, you should move it away form the TV and try again. If this still doesn't work, you may have an out-of-alignment cassette unit. Take the cassette unit and tape to your ATARI dealer and have him check the unit.

In the unlikely event that the tape is bad, return it to your local dealer and he will replace it free of charge.

LOADING INSTRUCTIONS, DISK VERSION

To load Decision Maker, first make sure the disk drive is connected to the computer and turned on. Insert the Decision Maker program diskette into the drive and close the door. Turn the computer off and then on again to boot the DOS. Then type LOAD "D:DMAKER" and press RETURN. The disk will spin, the busy light will light up, and the program will load. After the ATARI displays READY, type RUN and press RETURN to start the program.

If you get an error while loading, the ATARI will stop and display an error message. You should remove the diskette from the drive, turn the computer and the disk drive off and on again, and repeat the above procedure.Be sure the disk unit is at least one foot away from the TV set. If you continue to have trouble, take the diskette and the drive to your ATARI dealer and have him check the unit.

In the unlikely event that the diskette is bad, return it to your local dealer and he will replace it free of charge.

THE MENU

Load Decision Maker as described in chapter 2 and run it. After the title and copyright notice have been displayed, you will see the menu, which looks like this:

Alternative:	**1.**	Add
	2.	Change/Delete
	3.	List
Factors:	**4.**	Add
	5.	Change/Delete
	6.	List/Rate
Score:	**7.**	Score alternatives
Compute:	**8.**	Display result
	9.	Print result
Data files:	**10.**	Store data
	11.	Recall data
	12.	Show DM files
	13.	End

For your convenience, the menu is arranged in roughly the same step-by-step order you would follow in preparing a decision. Note that the first three items deal with entering and editing alternatives; the next three items deal with factors. Items 8 and 9 invoke the computational part of the program to display or print the decision result. Items 10 through 12 deal with handling data files. Thus, the selections in the menu are clustered in groups which are functionally related.

Option 12 is available only on the disk version. The tape version uses option 12 to end the program and has no option 13.

You select the operation you wish to perform by entering its number. Each of these is described in detail below.

OPTION 1: ADDING ALTERNATIVES

The first step in making a decision is determining just what your alternatives are. You may have anywhere from 2 to 10 alternatives. To make your list of alternatives, or to add to an existing list, select option 1.

To enter an alternative, simply type in a brief description of it. The description may consist of any combination of letters, numbers, and punctuation marks, subject to the limitations described in chapter 1. A maximum of 15 characters may be entered.

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After you have entered an alternative you will be prompted to enter another one. When you are finished entering alternatives, just press RETURN and you will see the menu again.

OPTION 2: CHANGING OR DELETING ALTERNATIVES

This option allows you to make a change to any of the alternatives entered so far, or to delete any of them. If you have not entered any alternatives yet, this option will do nothing.

Each alternative will be displayed one at a time. If you do NOT want to change it or delete it, just press RETURN and the next alternative will be displayed.

If you wish to make a CHANGE to the alternative, enter a "C" (for "change"). You may then type in a new description for this alternative. The next alternative will then be displayed.

If you wish to make a CHANGE to the alternative, enter a "D" (for "delete"). Be sure not to delete an alternative unless you really mean it, for once it is deleted, it is gone for good!

If you wish to stop the display of alternatives and go back to the menu without having to look at the whole list one by one, enter an "E" (for "end").

OPTION 3: LISTING THE ALTERNATIVES

Use this option to see a list of all the alternatives you have entered so far. If you have not entered any alternatives yet, this option will do nothing.

OPTION 4: ADDING FACTORS

The next step in formulating a decision is to figure out what factors play a role in influencing the outcome. You may make a list of anywhere from 1 to 11 factors by using option 4.

Adding a factor is just like adding an alternative. Simply enter a descriptive word or phrase of up to 15 characters.

To stop adding factors and return to the menu, press RETURN without entering a description.

OPTION 5: CHANGING OR DELETING FACTORS

This option works just like option 3. The factors will be displayed one at a time. Enter a "C" to make a change, a "D" to delete, RETURN to see the next one, and "E" to end.

OPTION 6: LISTING AND RATING THE FACTORS

The third step in formulating your decision is to figure out how IMPORTANT you believe each factor to be in making the decision. This is called rating the factors.

When you select this option, all the factors you have entered so far will be listed on the screen. To the right of each factor's description will appear a number. This number (which is zero to start out with) represents how important you feel that factor is. The more important a particular factor is to you, the higher the number you should assign to it, and vice-versa.

To rate a factor, enter the number of the factor to be rated, then enter a whole number from zero to 100 to represent that factor's importance. Do this for each factor.

Of course, at least one factor must be the MOST important one; you should give it a rating of 100. The program requires that at least one factor be rated at 100. The others should be given numbers which are proportionately smaller.

For example, if you feel a factor is HALF as important as the most important one, you should give it a 50. Give a 25 to each factor you feel is a QUARTER as important, and so on. If a particular factor is of almost no importance to you at all, you may wish to give it a rating of 1.

At first it seems to make no sense to give a factor a rating of zero, because if it wasn't important to you at all, you shouldn't have included it in the list in the first place. However, zero values ARE allowed. This makes it convenient for you to temporarily eliminate a particular factor from consideration to see how the decision result is affected, without having to actually delete it from the list. Ordinarily, however, no factor should be assigned an importance of zero.

After having rated the importance of every factor, press RETURN when asked for the factor number and you will be returned to the menu.

OPTION 7: SCORING THE ALTERNATIVES

The fourth step in formulating a decision is to assign a score to each alternative with respect to each factor.

The first factor in your list will be displayed at the top of the screen. Beneath it will appear a list of all the alternatives. You have to score each alternative by assigning it a whole number from 1 to 100. What you are actually doing is comparing the alternatives to one another. An alternative that you believe ranks high, when looked at from the point of view of the particualr factor, should be given a high number. Other alternatives may be given lower numbers. The score you give the alternatives may be based on your personal opinion, or on fact, or on any basis that you believe is relevant.

After you have scored each alternative with respect to the first factor, you must repeat the process for each of the remaining factors. With practice in using this program and with careful forethought you can accomplish these steps rapidly, even with many alternatives and factors to evaluate.

The examples given in the next chapter should make this idea clear. The important thing to remember is that the scores you give each alternative represent how good or how bad you think each alternative is compared to the others when viewed only in the light of the specific factor displayed.

After you have finished assigning all the scores you will be returned to the menu.

OPTION 8: DISPLAYING THE DECISION RESULT

After you have accomplished all of the above steps in formulating your decision, select option 8 to see what the result is.

When you select this option there will be a slight pause as the computer does it calculations. Then all the alternatives will be displayed, with the best choice on top and the others ranked below it. To the right of each alternative you will see a number. This number is an indication of how good a choice each alternative is. The first choice always has a value of 100. The other choices are valued proportionately lower. An alternative that has a value of 50, for example, is only half as good a choice as the top choice.

Remember, the answer you see is based solely on the information you typed into the computer. The result is calculated from the scores you gave each alternative as well as the importance ratings you gave each factor. If you change any of those numbers the result of the decision will be different.

Try it and see! One of the nice features of this program is that you can easily go back and change some of the data to see how it affects the outcome. You can do this as many times as you like; the program will always recompute the result each time you select this option.

OPTION 9: PRINTING THE DECISION RESULT

Use this option to get a printout of all the steps involved in formulating the decision as well as the result of the decision. This is very useful for document-ing not only WHAT decision you made, but HOW you came to make it.

To use this option you must have the ATARI 825 printer or other properly interfaced 80-column printer connected and loaded with paper. If a printer is not connected or not turned on, the message "PRINTER NOT READY" will be displayed and this option will not work.

Depending on how many alternatives and factors you have specified, the printout will be either one or two pages long. A title and page number will be printed at the top of each page. When printing is completed the page will be ejected, leaving the paper in correct position for subsequent printouts.

OPTION 10: STORING THE DATA

It is possible to store your decision data on disk or tape. This is useful if you wish to review or update a previous decision without having to type in all the information again.

If you are using disk, be sure the diskette you want to store the data on is in the drive. You will be requested to enter a file name. We recommend you use a name which will help you remember the nature or subject matter of the decision you are scoring. File names may be up to 8 characters long. If there is already a file on the disk having the same name, you will see the message "FILE EXISTS" and be asked if you wish to replace it. If you DO wish to replace it, enter a "Y" (for "yes"); the existing file will be erased and your current data will be recorded on the disk in its place. If you do NOT wish to erase the existing file, enter "N" (for "no") or simply press RETURN, and you will be given the opportunity to give your data a different file name.

If you change your mind and do not wish to store any data at all, press RETURN without entering a file name and you will be returned to the menu.

If you are using tape, put a fresh cassette tape into the cassette recorder and position it to the point at which you wish to store the data. Be sure to write down the tape counter reading for future reference. When the tape is properly positioned, press the RETURN key. (If you change your mind at this point, press any key other than the RETURN key and you will be returned to the menu.) The computer will beep twice. Press both the RECORD and PLAY buttons on the cassette recorder, then press the RETURN key again. The tape will move and the data will be recorded on the tape. Then the tape will stop and the menu will be displayed. At this point you should rewind the tape, label it appropriately, and put it away in a safe place.

OPTION 11: RECALLING A DATA FILE

Data from a previously stored decision may be recalled at any time by selecting this option. Be aware that using this option will erase the data currently in the computer's memory and replace it with the data you are recalling.

If you are using disk, be sure the diskette containing the desired data is in the disk drive. You will be requested to enter a file name. Simply enter the same name you used when you stored the data previously. If you press RETURN without entering a file name, the data currently in memory will be preserved and the menu will be redisplayed.

After you have entered a file name, the data will be read into the computer's memory from the disk. The menu will then be redisplayed. If the file you specified is not on the disk, the message "FILE NOT FOUND" will be displayed and you will be asked to enter the file name again.

If you are using tape, insert the cassette containing the data into the cassette unit and position it appropriately. Then press RETURN. (If you change your mind at this point, press any key other than the RETURN key and you will be returned to the menu.) The computer will beep once. Press the PLAY button on the cassette recorder and press RETURN again. The tape will move and the data will be read into the computer's memory. Then the tape will stop and the menu will be redisplayed. Rewind the tape and put it away.

OPTION 12: DISPLAYING THE DISK FILES

This option is available only on the disk version of Decision Maker. It is used to display a list of all the Decision Maker files which are on the diskette currently in the drive. No other files on the disk will be displayed.

After the files have all been displayed, press RETURN to go back to the menu.

OPTION 13: ENDING THE PROGRAM

When you are finished using Decision Maker, use this option to end the program and go on to other uses with your computer.

If you are finished working with one decision and wish to begin another, you should select this option to end the program then enter RUN to start the program over from scratch.

EXAMPLE 1: WHICH CAR TO BUY?

Let's pretend you are shopping around for a new car. The first thing you have to do is figure out what your alternatives are, that is, which cars you want to consider for purchase. Since this program can handle a maximum of 10 alternatives, you may have a list of up to 10 cars to choose from.

STEP 1: ENTERING THE ALTERNATIVES

Say you have narrowed the choices down to five cars. They are:

1. Honda Civic
2. Dodge Champ
3. Toyota Celica
4. Plymough Reliant
5. Ford Escort

To enter these alternatives into the computer, select option 1 from the menu. You will be asked to enter them one at a time.

Just for fun, to see if the program really works, let's throw in a really crazy choice which you don't think you would ever really buy: a Cadillac Seville! Your list of alternatives now has six cars in it.

If you made a mistake, use menu option 2 to go back and correct any errors in your list of alternatives.

STEP 2: ENTERING THE FACTORS

The next step is to figure out what factors are important to you in deciding what is a good car. For example, many people feel that fuel economy is an important consideration. Also important may be the price and styling. Let's say you have compiled the following list of factors:

1. Price
2. Styling
3. Fuel economy
4. Room & comfort
5. Handling
6. Options avail.
7. Dealership
8. Service costs
9. Workmanship
10. Safety
11. Insurance cost

Use menu option 4 to enter these factors into the computer. If you made a mistake, use option 5 to go back and make corrections.

STEP 3: RATING THE FACTORS IN IMPORTANCE

The next step is to decide which factor is the MOST important one. Let's say you feel fuel economy to be the most important consideration. You should therefore give it a rating of 100. Select menu option 6 to rate the factors. The list of factors is displayed, with a column of zeroes down the right side of the screen. Since you wish to give fuel economy (third on the list) a rating, enter a 3, then enter 100. The list will be redisplayed, this time with the number 100 to the right of fuel economy.

Now, say you believe workmanship is almost as important as fuel economy and you want to give it a rating of 90. Enter a 9 (since workmanship is 9th on the list) and then a 90. Furthermore, let's say you feel that handling is only half as important as fuel economy; you should therefore give it a rating of 50.

Repeat this procedure for every factor, rating each in accordance with how important you think it is in deciding which car to buy.

STEP 4: ASSIGNING SCORES TO THE ALTERNATIVES

Now you should select menu option 7 to assign a score to each alternative with respect to each factor. When you select this option, the display will look like this:

> Score alternatives
> with regard to
> Price.
>
> **1.** Honda Civic   0
> **2.** Dodge Champ   0
>
> **3.** Toyota Celica   0
> **4.** Plymouth Reliant
> **3.** Ford Escort   0
> **5.** Cadillac Seville   0

Here is where you do some head scratching, soul searching, and fact finding in order to come up with some meaningful numbers. With regard to price it is relatively easy, since the prices of all the cars can be objectively compared. For example, say that the Honda Civic has the lowest price of all the cars listed; give it 100 points. Say the Cadillac's price is exactly double the Honda's price; give it 50 points (half as good). And so on.

On the other hand, rather than compare the actual dollar amounts of the prices of all the cars, you may choose to score the prices of the cars according to how much you think each car is WORTH its price. This approach will probably yield results which are more meaningful to you in the long run. Thus,

let's say you think the Ford Escort is MOST worth is price; give it 100 points. You think the Toyota Celeica is only half as good a value for its price; give it 50 points. You think the Dodge is hardly worth its price at all, give it a 1.

Continue to score each car according to how you think it stacks up against the others, considering only its price. When you are done, press RETURN.

Now you must repeat the entire procedure, but this time taking only styling into account. Give 100 points to the car which, in your opinion, has the best styling. Score the other cars proportionately less.

Do this again for fuel economy, then for room and comfort, and again for each factor in your list. Eventually, when you are all finished, the menu will be displayed again and you will be ready to go on to the next step.

STEP 5: COMPUTING AND DISPLAYING THE RESULTS

Now comes the fun part. Select option 8 from the menu and sit back as the computer grinds its way through all those numbers you entered and comes up with your answer. The alternatives will be listed in order of best choice to worst choice. The best alternative will have a value of 100 points, with the others having values proportionately lower. If an alternative has a value of 50, for example, it means it is half as good a choice as the top choice.

Remember that one of your choices was a Cadillac Seville and that you really had no intention of buying one. You only included it to see where it would come out in comparison with the other cars. Presumably, you gave it rather low scores with regard to fuel economy, price, and cost of service. You probably scored it high in styling and comfort. Most likely it came out lowest on the list of choices. If it didn't, it means that perhaps the Cadillac was not really so outrageous an alternative after all and deserves your serious consideration!

STEP 6: SAVING THE DECISION FOR LATER

Since you have gone to so much effort to arrive at this decision, you will probably want to save it so that you won't have to type all that stuff in again the next time. Use option 10 from the menu; you may wish to call the file "cars."

EXAMPLE 2: SHOULD I MARRY HER OR NOT?

Now we present an example of a different kind of decision. The main thing different about it is that you are choosing been only two alternatives rather than from among several.

The other thing different about this example is that you are dealing with factors which are almost completely subjective, unlike the price or fuel economy of cars which can be evaluated quite objecively.

The scenario is as follows: You are trying to decide whether or not to marry your girlfriend. What you need to do is sit down and figure out exactly what factors would be involved in trying to reach this decision. You have already attempted to ignore the fact that she has been harping on it for as long as you have known her, but in the end you decide that this is a factor to be taken into account after all. You settle upon the following list of factors:

1.   Her insistence to get married
2.   Her looks
3.   Age difference
4.   Personality
5.   Religion
6.   Sexual compatibility
7.   Her money
8.   Her family
9.   Your money
10.   Your family

You must figure out how important each one of these factors is in deciding whether or not to marry her. For example, perhaps the difference in your ages is not very important to you, but her personality is. Perhaps you feel religion (or religious compatibility) is to be the MOST important consideration (in which case you rate it at 100.)

Assigning scores is done as follows. Taking the first factor into account, how strongly does her insistence to get married weigh in favor of actually marrying her? How strongly does it weigh against? If, for example, it weighs twice as strongly in favor of marrying her than it does against, you should give the "Marry her" alternative twice as big a score as the "Don't marry her" alternative.

Next, take only her looks into account and evaluate how much her looks actually incline you to marry her as opposed to how much they incline you not to marry her. If you find that you are inclined neither way more than the other, give both alternatives the same score.

Continue doing this for every factor in the list. Then, when you select option 8 from the menu, you will have your answer as to whether you should marry her or not.

Suppose the results looks like this:

1. Marry her   100
2. Don't marry her   96

What does this mean? Well, basically it means you should marry her! But, notice that the alternative of not marry her has a value of 96, which is pretty high. This means that the choice to marry her did not exactly win by a landslide. Perhaps a slight change to a couple of the scores or a re-evaluation

of the importance of a couple of factors might swing the decision the other way!

If, however, the second alternative had scored only 50 points or less, you could be reasonably sure that the choice to marry her would be at least twice as good as the choice not to.

SUMMARY

You may find it instructive to go back and make modifications to some of the numbers you assigned to the various alternatives and factors, and then use option 8 to see how the results have changed. Experiment! Familiarize yourself with the program and how it works. If you have a printer, use option 9 to get printed reports so you can see at a glance all the factors that went into your decision and led to the results you got.

Try entering a decision that you actually made some time in the past. See if the program comes to the same conclusion you did. Did you actually do what the program says is best? Now, using "20-20 hindsight," re-evaluate the factors and modify the scores to cause the results to come out the way you had actually made the decision in the past. Should you have made a different decision? Was your actual decision based on firm and reasonable grounds?

The above two examples represent only the top of the decision making iceberg. The applications are limited only by your imagination.

DECISION MAKER
ATARI 400/800

DECISION MAKER is one of many Creative Software home-utility programs designed to turn your computer into a truly useful household tool.

With the Creative Software **DECISION MAKER** program, you can prescreen important decisions based on as many as 11 different criteria. Decide between as many as ten alternatives. You enter relevant information; the computer does the rest. For example: Which car should I buy? Should I marry?

If you want to challenge the computer's decision, simply change the information you feed it and compare the results.

- Data saved for future reference
- Output to screen or printer
- Your decisions documented
- Unlimited applications

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